



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-7B20E BYPASS RATIO: 5.5
 UNIQUE ID NUMBER: 01P11CM111 PRESSURE RATIO (π_{00}): 22.4
 COMBUSTOR: Tech Insertion
 ENGINE TYPE: TF RATED THRUST (F_{00}) (kN): 91.6

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	7.3	79.4	34.5	9.5
AS % OF ORIGINAL LIMIT	37.3	67.3	40.7	39.3
AS % OF CAEP/2 LIMIT (NO _x)			50.9	
AS % OF CAEP/4 LIMIT (NO _x)			62.9	
AS % OF CAEP/6 LIMIT (NO _x)			71.5	
AS % OF CAEP/8 LIMIT (NO _x)			87.5	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 - OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	0.896	0.03	0.15	15.61	8.7
CLIMB OUT	85	2.2	0.746	0.03	0.23	13.50	6.8
APPROACH	30	4.0	0.268	0.08	5.03	8.00	2.1
IDLE	7	26.0	0.094	3.84	43.31	3.80	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			348	572	6729	2987	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				6.3	73.4	32.6	8.7
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.6	3.2	1.1	2.2
RANGE (D _p /F ₀₀ in g/kN, or SN)				5.55-6.69	69.8-75.3	31.5-33.7	7.1-11.1

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS
 STAGE BLEED 0 (% CORE FLOW) AT All POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.6-98.5
TEMPERATURE (K)	277-293
ABS HUMIDITY (kg/kg)	0.0015-0.00628

FUEL

SPEC	Jet A
H/C	1.92-1.93
AROM (%)	16.2-17.5

MANUFACTURER: CFM International
 TEST ORGANIZATION: General Electric Company
 TEST LOCATION: PTO, Ohio
 TEST DATES: 29/09/2005-23/03/2006

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

1. Ref. GE REPORT CR-2097/3 Rev. 1
2. Engine S/N 874-026/01, 778-024/01B, and 892-769/01
3. Ref. GE REPORT CR-900E Rev. 2, July 19, 2010
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)